

# HEB (D-3): sc-28364

## BACKGROUND

Differentiation of myogenic cells is regulated by multiple positively and negatively acting factors. One well characterized family of helix-loop-helix (HLH) proteins known to play an important role in the regulation of muscle cell development includes MyoD, myogenin, Myf-5 and Myf-6 (also designated MRF-4 or herculin). MyoD transcription factors form heterodimers with products of a more widely expressed family of bHLH genes, the E family, which consists of at least three distinct genes: E2A, IF2 and HEB. MyoD-E heterodimers bind avidly to consensus (CANNTG) E box target sites that are functionally important elements in the upstream regulatory sequences of many muscle-specific terminal differentiation genes. Both homo- and hetero-oligomers of these proteins are able to distinguish very closely related E box proteins and are believed to play important roles in lineage specific gene expression.

## REFERENCES

1. Wright, W.E., et al. 1989. Myogenin, a factor regulating myogenesis, has a domain homologous to MyoD. *Cell* 56: 607-617.
2. Murre, C., et al. 1989. Interactions between heterologous helix-loop-helix proteins generate complexes that bind specifically to a common DNA sequence. *Cell* 58: 537-544.
3. Braun, T., et al. 1989. A novel human muscle factor related to but distinct from MyoD1 induces myogenic conversion in 10T1/2 fibroblasts. *EMBO J.* 8: 701-709.
4. Rhodes, S.J., et al. 1989. Identification of MRF4: a new member of the muscle regulatory factor gene family. *Genes Dev.* 3: 2050-2061.

## CHROMOSOMAL LOCATION

Genetic locus: TCF12 (human) mapping to 15q21.3; Tcf12 (mouse) mapping to 9 D.

## SOURCE

HEB (D-3) is a mouse monoclonal antibody raised against amino acids 31-160 of HEB of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-28364 X, 200 µg/0.1 ml.

HEB (D-3) is available conjugated to agarose (sc-28364 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-28364 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-28364 PE), fluorescein (sc-28364 FITC), Alexa Fluor<sup>®</sup> 488 (sc-28364 AF488), Alexa Fluor<sup>®</sup> 546 (sc-28364 AF546), Alexa Fluor<sup>®</sup> 594 (sc-28364 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-28364 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-28364 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-28364 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## APPLICATIONS

HEB (D-3) is recommended for detection of HEB of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

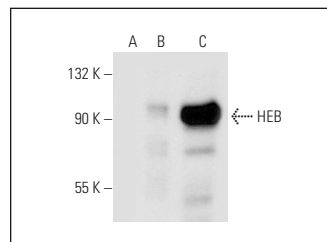
Suitable for use as control antibody for HEB siRNA (h): sc-35552, HEB siRNA (m): sc-35553, HEB shRNA Plasmid (h): sc-35552-SH, HEB shRNA Plasmid (m): sc-35553-SH, HEB shRNA (h) Lentiviral Particles: sc-35552-V and HEB shRNA (m) Lentiviral Particles: sc-35553-V.

HEB (D-3) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

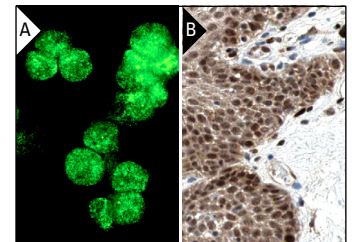
Molecular Weight of HEB: 85 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, Jurkat nuclear extract: sc-2132 or HEB (h): 293T Lysate: sc-116193.

## DATA



HEB (D-3): sc-28364. Western blot analysis of HEB expression in non-transfected 293T: sc-117752 (A), human HEB transfected 293T: sc-116193 (B) and Jurkat (C) whole cell lysates.



HEB (D-3): sc-28364. Immunofluorescence staining of methanol-fixed Jurkat cells showing nuclear localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human oral mucosa tissue showing nuclear staining of surface epithelial cells. Kindly provided by The Swedish Human Protein Atlas (HPA) program (B).

## SELECT PRODUCT CITATIONS

1. Fan, C.S., et al. 2018. Osteopontin-integrin engagement induces HIF-1 $\alpha$ -TCF12-mediated endothelial-mesenchymal transition to exacerbate colorectal cancer. *Oncotarget* 9: 4998-5015.
2. Rao, C., et al. 2020. The transcription factor E2A drives neural differentiation in pluripotent cells. *Development* 147: dev184093.
3. Davis, E.E., et al. 2020. TCF12 haploinsufficiency causes autosomal dominant Kallmann syndrome and reveals network-level interactions between causal loci. *Hum. Mol. Genet.* E-published.

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.